BEFORE THE PUBLIC UTILITIES COMMISSION

OF THE STATE OF HAWAII

In the Matter of the Application of	)	
	)	
PUBLIC UTILITIES COMMISSION	)	DOCKET NO. 2008-0273
	)	
Instituting a Proceeding to Investigate the Implementation of Feed-in Tariffs.	)	
	)	
	)	

THE SOLAR ALLIANCE'S AND HAWAII SOLAR ENERGY ASSOCIATION'S SUBMISSIONS OF INFORMATION

AND

CERTIFICATE OF SERVICE

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TO THE HONORABLE PUBLIC UTILITIES COMMISSION OF THE STATE OF HAWAII:

Pursuant to the Hawaii Public Utilities Commission's (the "Commission") Order Granting The County Of Hawaii's Motion For Approval To Amend its Status As An Intervenor To A Participant, Filed On April 8, 2009; Granting The City And County Of Honolulu's Motion For Approval To Amend its Status As An Intervenor To A Participant, Filed On April 8, 2009; Amending Hawaii Holdings, LLC, Doing Business As First Wind And Sempra Generation's Status As Intervenors To Participants; And Amending The Schedule In This Proceedings, filed herein on April 27, 2009, as Modified, The Solar Alliance ("SA") and Hawaii Solar Energy Association ("HSEA") (herein after jointly referred to as "SA/HSEA") hereby submits to the Commission its Submissions of Information.

1. SA/HSEA proposes that changes should be made to HECO Companies' Rule 14 in order to encourage more renewable generators, as envisioned in the October 2008 Energy Agreement between the HECO Companies and the State (hereafter "the Energy Agreement"):

SA/HSEA proposes that *Rule 14, Appendix I, Section 2. General Interconnection*

Guidelines d. Utility Feeder Penetration be amended. This section introduces a ten percent feeder penetration limit. A limit at this level is at odds with the proposal in the Energy Agreement which indicates that distribution level circuit penetration be capped at 15%. The specific language of the Agreement is as follows:

> • Distributed generation interconnection will be limited on a per-circuit basis, where generation (including PV, micro wind, internal combustion engines, and net metered generation) feeding into the circuit shall be limited to no more than **15% of peak circuit demand for all distribution-level circuits of 12kV or lower;**[1]

SA/HSEA does not necessarily agree that 15% should serve as an upper limit on per-circuit distributed generation. However, SA/HSEA believe that the fact that the HECO Companies agreed to this level indicates that such levels will not engender reliability or stability problems, and would therefore constitute a reasonable place to begin.

SA/HSEA would like to emphasize that the proposal here, as derived from the Energy Agreement, is for 15% of peak circuit demand of all distribution level circuits of 12 kV or lower. In the HECO Companies' activities, "distribution level circuits" have not always been defined as being equivalent to "feeder distribution" for purposes of determining the need for an IRS. For this purpose, at least HELCO has defined "utility feeder" as the line running from the substation to a set of customers.

This more restrictive definition may or may not be different from the Commission's intention where it defines "feeder penetration" in Rule 14, Appendix I, Section 2, General Interconnection Guidelines, (d) Utility Feeder Guidelines. In any case, SA/HSEA note that there is no publically available information regarding the configuration of circuits or "feeder circuits," however defined, and that this makes it impossible to know the penetration of a given feeder in advance of the proposal for a specific project. This lack of transparency has substantial

[1] See Section 19 at p. 28 (emphasis added).

marketplace impacts as the time frame to complete an IRS is unknown and can not only delay completion but shift placed-in-service dates into subsequent tax years, which undermines project funding given the tax incentive support for PV projects.

Second, SA/HSEA proposes that *Section 3 Design Requirements, f. Supervisory control of Rule 14* be changed. This section states that the utility may require computerized remote control for any generating facilities with an aggregate capacity of more than 1MW. This requirement creates a *de facto* system size limit that investors may not be willing to exceed, due to fears of incurring unknown levels of additional cost, study requirements, and/or remote curtailment. Each of these factors has the ability to substantially alter the financial performance of an investment in renewable energy and the lack of clarity on these issues will serve as a disincentive to investment in projects over 1 MW, irrespective of factors such as customer load and availability of investment funds that ought to determine system sizes.

2. "Photovoltaic Generating Facility" should be defined as "a Renewable Energy Generating Facility that generates electricity from Solar Radiation.".

In collaboration with Sopogy Inc., SA/HSEA propose that the following definitions be adopted by the Commission:

> "Photovoltaic Generating Facility" means a Renewable Energy Generating Facility that generates electricity from sunlight.
>
> "Concentrating Solar Power Facility" means a Renewable Energy Generating Facility that uses mirrors to concentrate the sun's heat in order to generate electricity.

3. Cost Information for PV:

SA/HSEA submits the Cost based on the Berkeley Laboratories at:

http://eetd.lbl.gov/ea/emp/reports/lbnl-1516e-web.pdf

should be used as the starting point of the discussion and then (i) adjusted down for falling PV

prices and (ii) adjusted up for cost of Hawaii construction.

4. SA/HSEA's Proposed Rate of Return:

SA/HSEA proposes that the rate of return should be at minimum equal to the 10.67% ROE currently provide to the HECO Companies under a monopolistic economic environment.

5. SA/HSEA's proposed Pricing and Market Penetration Framework:

SA/HSEA proposes that the Commission adopt a Pricing and Market Penetration Framework based on penetration digression as PV systems are installed. This allows quantification of the cost impact. See example below. [2] FIT Tariff can be modeled with at lower starting rate and have an escalation component, while still providing the investor with a reasonable rate of return.

FIT Rate

Penetration Digression EXAMPLE

		Oahu			
Step One		> 10 kW	>100 kW	>500 kW	>5000 kW
Rates		0.479	0.436	0.396	0.363
kW	37,000	2000	5000	10000	20000
kWh	56,153,790	3,035,340	7,588,350	15,176,700	30,353,400
First year cost	$ 21,790,705.86	$ 1,453,928	$ 3,308,521	$ 6,009,973	$ 11,018,284
Step Two					
Rates		0.4311	0.3924	0.3564	0.3267
kW	37,000	2000	5000	10000	20000
kWh	56,153,790	3,035,340	7,588,350	15,176,700	30,353,400
First year cost	$ 19,611,635.27	$ 1,308,535	$ 2,977,669	$ 5,408,976	$ 9,916,456
Step Three					
Rates		0.38799	0.35316	0.32076	0.29403
kW	34,000	2000	2000	10000	20000
kWh	51,600,780	3,035,340	3,035,340	15,176,700	30,353,400
First year cost	$ 16,042,530.74	$ 1,177,682	$ 1,071,961	$ 4,868,078	$ 8,924,810

[2] Note rates are based on SA/HSEA previously submitted rates attached to its Opening Statement of Position and assumes no monetization of State Tax credit and remains flat over a 20 year period.

Maui					
Step One		> 10 kW	>100 kW	>500 kW	>5000 kW
Rates		0.527	0.479	0.436	0.399
kW	19,000	2000	2000	5000	10000
kWh	28,835,730	3,035,340	3,035,340	7,588,350	15,176,700
First year cost	$ 12,417,575.94	$ 1,599,624	$ 1,453,928	$ 3,308,521	$ 6,055,503
Step Two					
Rates		0.4743	0.4311	0.3924	0.3591
kW	19,000	2000	2000	5000	10000
kWh	28,835,730	3,035,340	3,035,340	7,588,350	15,176,700
First year cost	$ 11,175,818.35	$ 1,439,662	$ 1,308,535	$ 2,977,669	$ 5,449,953
Step Three					
Rates		0.42687	0.38799	0.35316	0.32319
kW	19,000	2000	2000	5000	10000
kWh	28,835,730	3,035,340	3,035,340	7,588,350	15,176,700
First year cost	$ 10,058,236.51	$ 1,295,696	$ 1,177,682	$ 2,679,902	$ 4,904,958

Hawaii					
Step One		> 10 kW	>100 kW	>500 kW	>5000 kW
Rates		0.575	0.523	0.475	0.436
kW	19,000	2000	2000	5000	10000
kWh	28,835,730	3,035,340	3,035,340	7,588,350	15,176,700
First year cost	$ 13,554,310.77	$ 1,745,321	$ 1,587,483	$ 3,604,466	$ 6,617,041
Step Two					
Rates		0.5175	0.4707	0.4275	0.3924
kW	19,000	2000	2000	5000	10000
kWh	28,835,730	3,035,340	3,035,340	7,588,350	15,176,700
First year cost	$ 12,198,879.69	$ 1,570,788	$ 1,428,735	$ 3,244,020	$ 5,955,337
Step Three					
Rates		0.46575	0.42363	0.38475	0.35316
kW	19,000	2000	2000	5000	10000
kWh	28,835,730	3,035,340	3,035,340	7,588,350	15,176,700
First year cost	$ 10,978,991.72	$ 1,413,710	$ 1,285,861	$ 2,919,618	$ 5,359,803

		Lanai		Molokai	
Step One		> 10 kW	>100 kW	> 10 kW	>100 kW
Rates		0.575	0.523	0.575	0.523
kW	2,000	500	500	500	500
kWh	3,035,340	758,835	758,835	758,835	758,835
First year cost	$ 1,666,401.66	$ 436,330	$ 396,871	$ 436,330	$ 396,871
Step Two					
Rates		0.5175	0.4707	0.5175	0.4707
kW	2,000	500	500	500	500
kWh	3,035,340	758,835	758,835	758,835	758,835
First year cost	$ 1,499,761.49	$ 392,697	$ 357,184	$ 392,697	$ 357,184
Step Three					
Rates		0.46575	0.42363	0.46575	0.42363
kW	2,000	500	500	500	500
kWh	3,035,340	758,835	758,835	758,835	758,835
First year cost	$ 1,349,785.34	$ 353,427	$ 321,465	$ 353,427	$ 321,465

6. SA/HSEA's proposed cost for interconnection:

SA/HSEA's proposal for interconnection is illustrated in the table below. This approach will share the cost between the rate payer and the utility for the inconnection related costs and potential features/technical capabilities. In effect the larger the system size the more inconnection expenses would be required of the developer. In addition, the larger the system size the grid security needs to be considered by the developer. Due to the economies of scale, the larger projects would be able to absorb a higher initial, and reduce the impact on the developer reasonable rate of return.

Level	System Size by Island	Cost Obligations			Interconnection Features					
		IRS	Engineering	Equipment	curtailment	Dispatch	voltage	frequency	Fault	Scada
Tier 1	Under Oahu-500 kW; Maui/Hawaii 250 kW; Molokai/lanai 100kW	HECO	HECO	HECO	none	None	none	none	none	None
Tier 2	Under Oahu-1000 kW; Maui/Hawaii 500 kW; Molokai/Lanai NONE	HECO	HECO	Developer	none	None	none	none	none	None
Tier 3	Under Oahu-5000 kW; Maui/Hawaii 2750 kW; Molokai/Lanai above 100kW	Developer	Developer	Developer	yes	Yes	yes	yes	yes	Yes

7. Should the Utility have the option to purchase the renewable generation facility at the end of the 20 year FIT term?:

The Utility should only have the option to purchase the renewable generation facility at the end of the 20 year FIT term, if the developer and Utility chooses not to extent the contract on a month to month basis.[3]

8. Ownership of the Renewable Energy Credits should remain with the Developer of the renewable generator:

Ownership of the Renewable Energy Credits "REC" are an asset to the Developer of the renewable generator and is not part of the FiT rate. The FiT rate would need to adjusted higher if the Utility would like to purchase the REC. This is especially true since, the Utility does not need the REC to meet its renewable portfolio standard.

9. Application, Queuing, Tracking, and Transparency:

As a means to frame the application, queing, tracking and transparency of the FIT,

[3] In calculating the initial FIT rate, it should be assumed that the generator will have only salvage value at the end of the 20 year term.

SA/HSEA previous noted the CSI program as a good model to follow because the contents of the CSI Handbook contains and addresses a large majority of the framework requirement for Hawaii's proposed FIT program.[4]

See: http://www.gosolarcalifornia.ca.gov/documents/CSI_HANDBOOK.PDF

Respectfully submitted.

DATED: Honolulu, Hawaii, May 8, 2009

MARK DUDA

President, Hawaii Solar Energy Association

[4] the CSI framework is capacity based, (on system size), while Hawaii should have a performance based framework (kWh produced -require to quantify rate payer impact),

Respectfully submitted.

DATED: Honolulu, Hawaii, 2009.

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